



# From design to construction, engineers do it all at BWSR

September 2013 Snapshots



*In a recent project, BWSR engineering staff designed a weir at a wetland restoration site to safely convey water at a fixed elevation. Pictures 1-3 include site prior to construction, weir installation and completed project.*

At the Minnesota Board of Water and Soil Resources (BWSR), engineering section staff members who provide technical support to wetland restoration efforts believe their jobs are the most creative and diverse in the agency.

Whether through the Reinvest in Minnesota Reserve Program, the state's Wetland Banking Program, or various other programs, engineering staff are involved with projects from inception through completion.

Jesse Preston, BWSR Conservation Engineering Technician, said engineering staff uses a "technical eye" to evaluate applications and determine if wetland restoration potential exists.

"Engineering staff are equipped with the tools to assess and visualize historical conditions of a site and utilize this knowledge to return most drained or altered wetlands to their "pre-drained" condition," Preston said.

Engineering staff members work with any number of agency partners (NRCS, SWCD, USFWS, DNR, etc.) throughout a wetland restoration. From detailed site investigations, through design and construction, engineering staff does it all.

"We collect information on site topography, soils, drainage and watershed and property boundaries to determine restoration feasibility and to develop comprehensive concept plans. We design projects and we oversee construction," Preston said. "Every wetland is unique and each engineering staff member is trained to assess the challenges and develop the most efficient, sustainable design."

BWSR engineering staff members say their jobs are anything but boring and many times, they need to be very creative and quick on their feet, like when they're stuck in the mud or being sprayed by a skunk.

Karen Bonde, long-time member of BWSR's engineering team said you never know what you are going to see in the field. "I've seen sites with quicksand; I've seen a moose in Polk County; and I've even seen a big black bear running away from being hunted," Bonde said.

Individual BWSR engineering staff members work on between 2-4 wetland restoration projects at a time, ranging in size from 20 to 1,500 acre sites. Projects span from only months to complete, to years, depending on complexity and size.

"BWSR engineering staff work to make the land as suitable for wildlife habitat, water quality, and flood storage as it was before human alterations," Preston said. "It's an incredibly rewarding job."